

Since our results are nearly identical to what was found in the United States,^{1,2} they suggest that sex differences in the use of coronary procedures are not influenced by factors such as health services organization or financial accessibility. □

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ABSTRACT

To determine factors associated with health insurance coverage among persons with acquired immunodeficiency syndrome (AIDS), we interviewed 1958 persons 18 years of age or older who were reported to have AIDS in 11 states and cities. Overall, 25% had no insurance, 55% had public insurance, and 20% had private insurance. Factors associated with lack of insurance varied by current employment status. Employed persons with an annual household income of less than \$10 000 were 3.6 times more likely to lack insurance than employed persons with a higher income. Unemployed persons diagnosed with AIDS for less than 1 year were two times more likely to lack health insurance than unemployed persons diagnosed for a longer time. Making insurance available to persons identified as most likely to lack insurance should improve access to care for persons with AIDS. (*Am J Public Health.* 1994;84: 1015-1018)

Health Insurance Coverage among Persons with AIDS: Results from a Multistate Surveillance Project

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Introduction

Access to and use of health care services are affected by insurance status.¹⁻⁵ Increasingly, coverage for acquired immunodeficiency syndrome (AIDS) cases is shifting to public insurers, such as Medicaid,⁶ most likely resulting from loss of private insurance among persons with AIDS⁷⁻⁹ and demographic shifts in populations affected by the human immunodeficiency virus (HIV) epidemic.^{10,11} To describe insurance coverage among persons with AIDS, we used information from a multistate interview project.

Methods

Eleven state and local health departments are collaborating with the Centers for Disease Control and Prevention (CDC) in the Supplement to HIV/AIDS Surveillance project. This project expands information routinely collected via AIDS surveillance through personal interviews of persons with AIDS. Persons reported with AIDS who are 18 years of age or older and are medically able to complete

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TABLE 1—Characteristics of Respondents and Reported AIDS Cases among Persons 18 Years of Age or Older, in Project Areas and Nationally, June 1, 1990, through June 30, 1992

Characteristic	Respondents in Project Areas, %		Persons with AIDS in the United States, % (n = 92 403) ^a
	Interviewed (n = 1958)	Not Interviewed (n = 717)	
Male gender*	85	92	87
Male-male sex exposure group*	59	58	54
Injection drug user	19	17	24
Male-male sex and injection drug user	8	11	5
Heterosexual contact	11	5	8
Transfusion associated	1	2	3
Undetermined	2	7	6
Race/ethnicity*			
White	52	55	49
Black	35	29	32
Hispanic	10	12	18
Other ^b	3	4	1

^aIncludes persons reported with AIDS during the same time period respondents were interviewed (June 1, 1990 through June 30, 1992).

^bIncludes persons of Asian, Pacific Islander, American Indian, and Alaskan native race/ethnicity.

* $P < .05$, interviewed compared with not interviewed.

completed interviews, 331 (12%) refused to be interviewed, and 386 (14%) could not be located. Compared with persons not interviewed, those who were interviewed were more likely to be female, to have a known exposure mode, and to be Black (Table 1). Characteristics of persons interviewed were comparable to those of persons with AIDS reported in the United States during the study interval except for a lower proportion of Hispanics (Table 1). The median age of respondents was 36 years (range = 18–77 years); 74% were 30–49 years of age.

Health Insurance Coverage

Overall, 25% of respondents had no insurance, 20% had private insurance, and 55% had public insurance (Table 2). Among those with private insurance, 71% had employer-provided insurance, and 29% had self-paid insurance. Among persons with public insurance, 90% had Medicaid, 4% had Medicare, 3% had state-funded assistance programs, 2% were part of the Civilian Health and Medical Program of the Uniformed Services or the Veterans Administration, and 1% had state-funded insurance continuation (including COBRA).

Eighty percent of persons with public insurance and 51% of persons with private insurance stated that their insurance paid for all treatments. Respondents with Medicaid had the highest proportion (83%) stating that all services were covered, and persons with Medicare had the lowest proportion (18%). Forty-eight percent of persons with private insurance and 74% of persons with Medicare said their insurance paid for some but not all treatments.

In the univariate analysis, characteristics significantly ($P < .05$) associated with not having insurance included being diagnosed with AIDS for less than 1 year and being selected from a facility-based sample (Table 2). In the multivariate analysis, among employed persons, having a household income of less than \$10 000 in the past year (adjusted odds ratio [AOR] = 3.6, 95% confidence interval [CI] = 2.6, 5.1) was associated with lack of health insurance; no association was found with time since AIDS diagnosis. Among unemployed persons from the population-based sample, having an income of less than \$10 000 (AOR = 1.7, CI = 1.2, 2.5) and being diagnosed with AIDS for less than 1 year (AOR = 2.2, CI = 1.4, 3.4) were associated with lack of health insurance. Conversely, among unemployed persons from facility-based samples, per-

the interview are eligible, as previously described.¹² Six sites used a population-based sample in which interviews were attempted with all eligible persons (Arizona, Delaware, South Carolina, and New Mexico) or with a 30% random sample of men who have sex with men (Los Angeles and Washington) and all persons with other modes of transmission. Five sites (Denver, Detroit, Connecticut, Florida, and Georgia) used a facility-based sample in which interviews were attempted with all eligible persons at selected medical facilities. Because these facilities were mostly public hospitals or clinics, insurance coverage varied by sampling method. Each participating health department developed procedures to ensure patient confidentiality, and projects were approved by local human subjects review boards.

We analyzed data for persons reported to have AIDS from June 1, 1990, through June 30, 1992. Participants were asked whether they currently had health insurance (including public insurance) and, if so, what type of insurance they mainly used to pay for HIV-related health care. For purposes of analysis, private insurance included both self-paid insurance (including self-paid COBRA insurance) and employer-provided insurance; public insurance included Medicaid, Medicare, state-funded insurance continuation (including state-funded COBRA insurance), the Civilian Health and Medical

Program of the Uniformed Services, and coverage by the Veterans Administration. (The Consolidated Omnibus Budget Reconciliation Act [COBRA] of 1985 allows individuals to continue private health insurance they received when employed for 18 to 29 months after loss of employment. States can pay health insurance premiums, with matching federal funds, for individuals who stopped working because of illness and can no longer afford premiums.) Income was defined as household income in the year preceding interview, before taxes.

In a multivariate analysis, logistic regression¹³ was used to determine factors associated with no insurance. We included variables significantly associated with no insurance in the univariate analysis (time since AIDS diagnosis and sampling method), as well as two variables most likely to change over time (employment and income). Because factors associated with lack of insurance differed by employment status, odds ratios were calculated separately for unemployed and employed persons. When results differed by sampling method, odds ratios were calculated separately.

Results

Description of Respondents

Of the 2675 eligible persons with AIDS selected for interviews, 1958 (74%)

sons with an income of less than \$10 000 (AOR = 1.7, CI = 1.2, 2.0) were more likely to have insurance than persons with a higher income; being diagnosed with AIDS for less than 1 year continued to be associated with no insurance (AOR = 2.1, CI = 1.7, 2.6).

Discussion

Among persons with AIDS, eligibility for public insurance has increased and public resources are used extensively for health care.^{5,6,14,15} Regardless of race/ethnicity, sex, or HIV exposure mode, we found the majority of our respondents relied on public insurance (mostly Medicaid) for medical care. Yet despite the increased eligibility for publicly funded insurance for persons with AIDS,^{16,17} one quarter of our respondents still lacked health insurance, similar to the proportion of all persons in the United States age 18–44 years who lack health insurance (14%–27%).^{18,19} A preliminary analysis of 821 persons with HIV infection but not AIDS who were interviewed as part of this project found that an even higher proportion (40%) reported no health insurance (CDC, unpublished data).

In the United States, income is an important predictor of lack of health insurance coverage, with 47% of those with incomes below the poverty level lacking health insurance in 1987.^{19,20} We found this generalization to be true for all employed persons and for unemployed persons from the population-based sample. However, among the unemployed in the facility-based sample, persons with lower incomes were more likely to have insurance. This finding is not surprising because although overall the facility-based sample had a higher proportion of persons with no insurance (as would be expected in public medical facilities), persons attending these facilities are probably provided with assistance in acquiring public insurance, and unemployed persons with low incomes would likely qualify. Regardless of sampling method, unemployed persons who had been diagnosed with AIDS for less than 1 year were more likely to lack health insurance than unemployed persons who had been diagnosed for at least 1 year. This difference may reflect ineligibility for Medicaid because personal assets were too high or because of administrative delays in obtaining public insurance or time restrictions for Medicare eligibility.^{15,20} For example, persons who were once employed and now receive Social Security Disability

TABLE 2—Proportion of Persons within Each Group with Private, Public, or No Health Insurance

Characteristic	Sample Size	Insurance Type, %		
		Private	Public	None
Sex				
Male	1632	21	53	26
Female	284	11	65	24
Race/ethnicity				
White	965	26	50	24
Black	679	11	62	27
Latin American	122	25	46	29
Puerto Rican	66	9	64	27
Exposure group				
Male-male sex	1122	26	50	24
Injection drug use	367	8	63	28
Male-male sex and injection drug use	143	15	57	28
Heterosexual contact	218	12	61	27
Education				
≥ 12 y	1399	25	50	25
< 12 y	501	6	67	27
Annual household income				
< \$10 000	1083	4	69	27
≥ \$10 000	746	43	33	24
Current employment				
Unemployed	1525	10	64	26
Employed	390	60	14	26
Time since AIDS diagnosis				
< 1 y	1317	22	49	29
≥ 1 y	599	16	67	17*
Sampling				
Facility based	1311	11	59	30
Population based	605	40	45	15*
Total	1958	20	55	25

Note: Excluded are 42 (2.1%) persons with unknown insurance status; respondents for whom there was no information were excluded within each group.

*Significant difference in the proportion with no insurance ($P < .05$); the largest group in each category is the reference group (e.g., facility-based samples have a significantly higher proportion of persons with no insurance compared with population-based samples).

Income may have an income too high to qualify for Medicaid, but must wait 2 years before they have the option to buy Medicare.^{16,17,21} Unless they receive funds under COBRA, such recently unemployed persons are unlikely to be able to continue the private health insurance they had when employed.^{17,20}

Even among insured persons, inequities in health care may occur. We found differences in payments for medical treatment for HIV infection by insurance type, with Medicare recipients being the least likely to report that all services were covered by their insurance. The need to supplement insurance coverage with out-of-pocket funds may deter appropriate use of health care and result in adverse clinical outcomes.³

Improving the use of, and access to, health services for HIV-infected persons will require increased insurance coverage

for both employed and unemployed persons. □

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ABSTRACT

Many studies demonstrating an association between race and the use of medical services have used hospital discharge abstract data. The quality of the measures of race in such data sources has heretofore been unexplored. Hospital discharge abstract data from New York State were used to identify 767 cardiac patients who had been admitted to a hospital twice. Racial classifications during the two admissions were concordant 93.7% of the time. Kappa was .89 for Blacks, .72 for Whites, and .43 for all other racial groups. Evidence suggests that the misclassification of race in hospital discharge abstract data is nondifferential; racial discrepancies in access to medical services are thus probably even greater than those previously reported. (*Am J Public Health.* 1994;84:1018-1021)

The Reliability of Racial Classifications in Hospital Discharge Abstract Data

Jan Blustein, MD, PhD

Introduction

Numerous studies have shown that Black Americans receive fewer medical services than their White counterparts.¹⁻⁸ Much of that research has been based on data abstracted from hospital medical records and reported to administrative agencies. However, there have been no published investigations of the reliability or validity of patient racial classifications in hospital discharge data sets. This is remarkable for two reasons. First, several studies have cast doubt on the reliability of the clinical information in those data sources, raising broader questions about the overall quality of the measures therein.⁹⁻¹¹ Second, critics have increasingly questioned the validity of the racial classifications in secondary data sources.¹²

This report of the reliability of racial classifications in a hospital discharge data source examines the concordance between assigned classifications during successive admissions for patients admitted twice. It describes the likely implications of misclassification for bias in previous reports of interracial differences in service

use. Finally, it describes some difficulties that arise in validating measures of race.

Methods

Source of the Data

The data source for the study was the Statewide Planning and Research Cooperative System (SPARCS), a hospital discharge abstract database maintained by the New York State Department of Health. It includes demographic, clinical, and billing information and is based on reports from individual hospitals. For each patient who is discharged, hospitals cull information from various sources. For example, clinical information is ab-

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